

BRIDGING THE LABOR GAP IN YOUR DC

Presented by:
Matt Wicks



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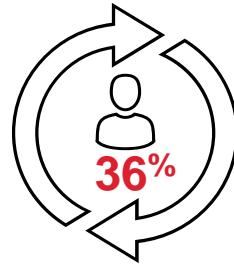
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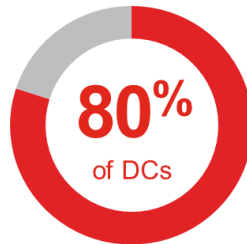
Industry Challenges — Labor Availability



Industry growth
outpaces the labor
pool by a ratio



Annual turnover
rate for warehouse
workers



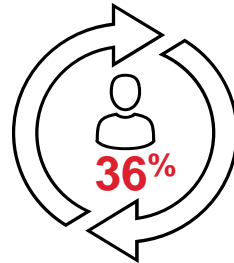
Manual operation
is today's norm

- Mega-DCs in remote locations struggle to attract enough low-skilled workers, who largely live in urban areas.
- Smaller urban DCs face fierce competition for labor.
- Unskilled workers don't need or want warehouse jobs. Their unemployment rate was an unprecedented 3.2% as of September 2019.
- Current government policies have sharply reduced the number of new immigrants, choking off a key pipeline for new warehouse labor.

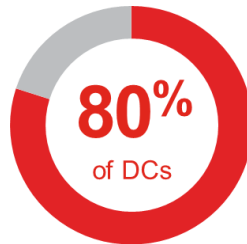
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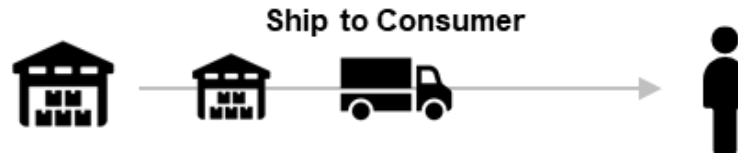
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- Cost to rehire ranges from 25–150% of an employee's annual salary.
- Five injuries per 100 full-time warehouse workers — over 50% higher than overall average
- Repetitive motion injuries cost employers \$80 million annually.
- Wages for DC laborers are increasing by 6.8% per year — triple the rise in other industries — with an average wage of \$13.30 an hour.

Industry Challenges — Consumer Demand



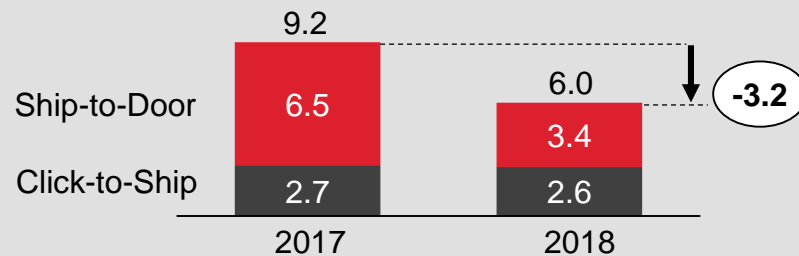
E-commerce Fulfillment



YoY %
'18 Holiday

18%

Click-to-Door Speed (days)
All merchants (excluding Amazon)

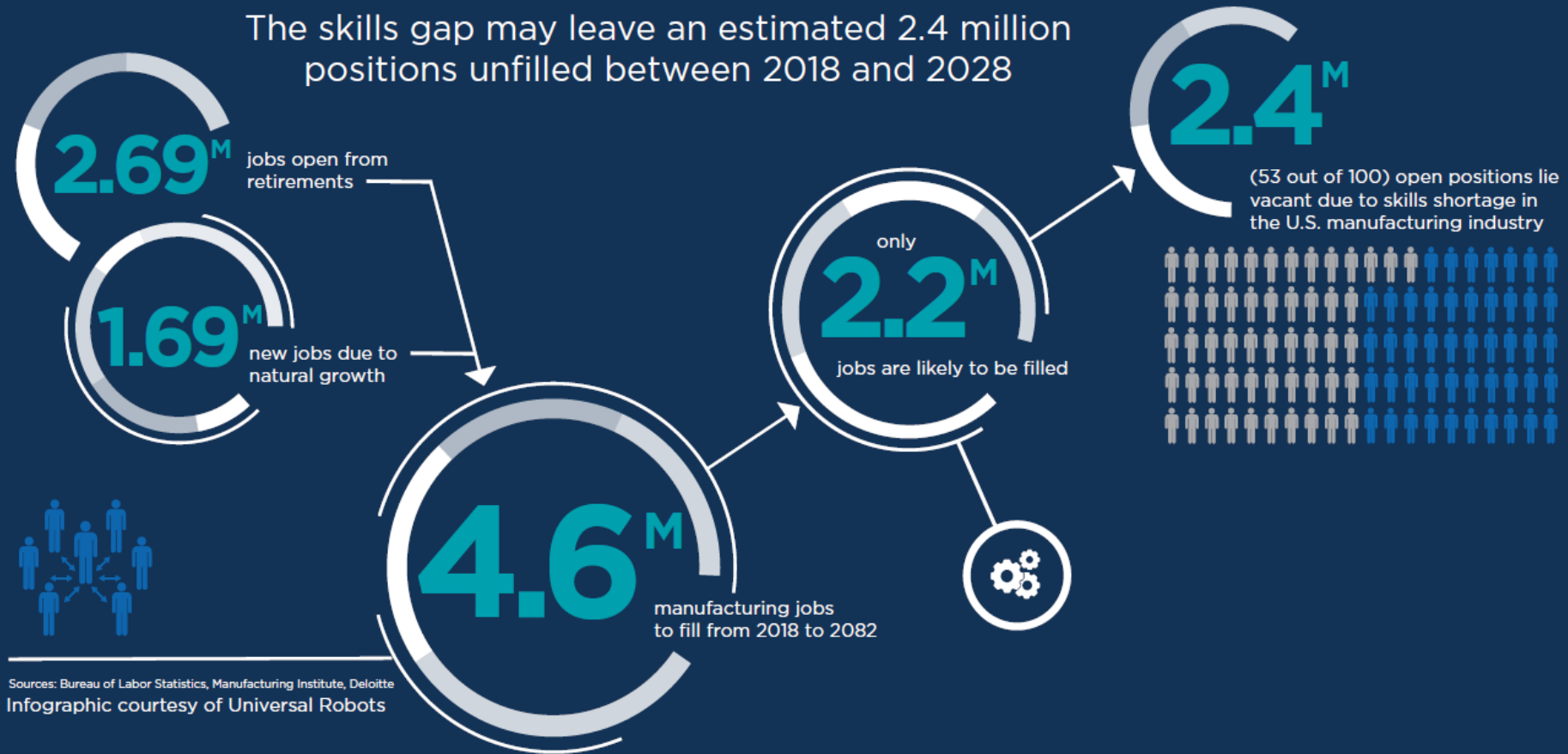


Industry Driver Highlights

- Increased pressure to deliver in a short amount of time with cutoff times being stretched later
- Proliferation of delivery and pickup locations
- Increased volume of small packages and irregulars

2.4M OPEN JOBS BETWEEN 2018-2028

The skills gap may leave an estimated 2.4 million positions unfilled between 2018 and 2028



Robots' Impact on Human Jobs

“Firms’ inability to stay competitive, not robots, is the biggest threat to American jobs.”



With more jobs available than job seekers and increased difficulty in finding qualified employees, it is no wonder why robots are being utilized more in the manufacturing industry as a solution to the job gap.



Firms’ inability to stay competitive, not robots, is the biggest threat to...

Friday, 5 May 2017 | 12:39 AM ET

Jeff Burnstein, President of Robotic Industries Association, talks about how companies can benefit from adopting automation.

[WATCH CNBC LIVE TV](#)



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Robotic Solutions to Augment Available Labor

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Robotic Sorter Induction

- Automates the manual sorter induction process
- Handles a variety of package sizes, including polybags, jiffy packs and boxes
- Frees limited labor from monotonous positions
 - Autonomous solution that can replace and/or supplement manual induction
- Ensures proper function of mission-critical sortation systems
 - Robot vision scans item and instructs flipper unit to ensure label faces up
- Maximizes throughput and sorter utilization
 - Loads as many sorter trays as possible



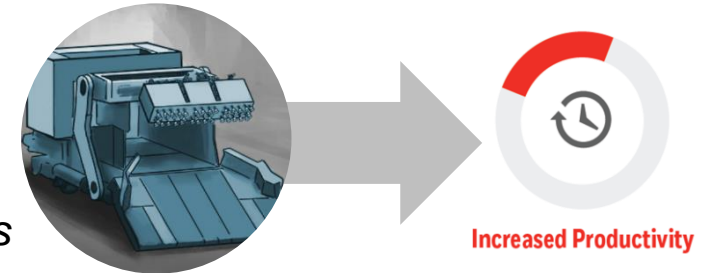
Manual induction



Robotic picking and induction

Robotic Truck Unloader

Designed for physically demanding and undesirable jobs in trailer unloading workflows



- Remove operator from hot, dirty, dangerous/injury-prone operation
- Operations remain outside of the harsh/dangerous environment, letting the robot do the hard work
- Operator lines up robotic unloader and places it in autonomous mode
- Operators can provide additional high-value activity while monitoring the machine
- Machine operates autonomously
 - Trailer and load characteristics analyzed
 - Robotic arm reaches for stacked cases while 'nose' conveyor sweeps off the floor of the trailer
 - Integrated unscrambling case conveyor delivers stream of product for induction to other processes
- Once unloading process is complete, the robotic unloader indexes back out onto the receiving dock

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Robotic Order Fulfillment

- Robotic technology used to pick items for order fulfillment
 - Improved order accuracy
 - No need for breaks
 - Picks a wide variety of items
 - No pre-training of SKUs required
 - Grasp detection optimizes picking
 - Easy integration with WMS and auxiliary systems
- Can perform many perception and grasping tasks with minimal human assistance



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Solutions to Bridge Skill and Technology Gaps

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Virtual Reality Training

- Addresses operational skills gap
- Virtual hands-on experience
 - Frees up machine for live production
 - Safe offline experience
 - Accommodates staff changeover
 - Saves travel costs
 - Training on-demand
- Training
 - Virtual hands-on experience
 - Step-by-step instructions for all operations
 - Equipment operation information
 - Perform equipment operation
 - Reference videos for equipment operation



Augmented Reality — Helping Maintenance

Hands-free augmented reality

“See what I see” troubleshooting

Quickly diagnose critical issues

Control system integration

Decrease unplanned downtime

Reduce required maintenance skills

Subject matter expert access from anywhere

Reduce costly travel for on-site experts

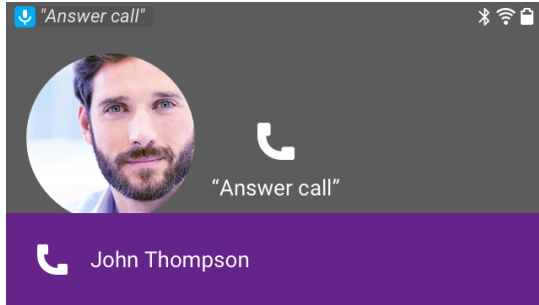


SHOW ME

DON'T TELL ME

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TechSight User View



Touch Navigation

Navigate cards and select items with the device's touch controls.

Voice Navigation

Speak to navigate cards and select items.

Hands-Free

Follow voice direction while keeping two hands available for a safe work environment.

Offline Support

Applications and data are cached offline so work can be done without network connection.



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TechSight Expert Side

Document Sharing

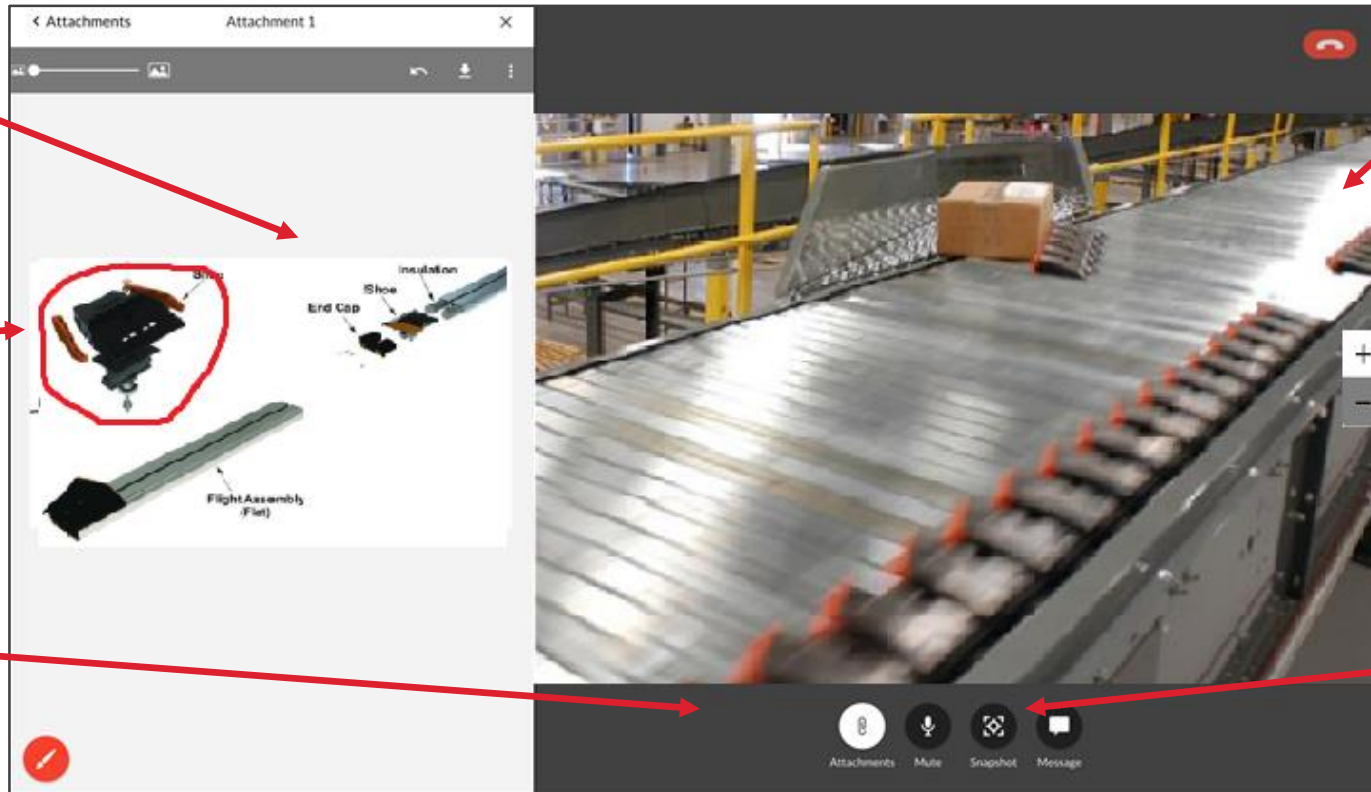
Clip and share snippets from PDF documents directly to smart glasses.

Telestration

Annotate on snapshots and document snippets and synchronize to smart glasses in real time.

Messaging

Send messages from Skylight Web to smart glasses.



HD Audio and Video

Bi-directionally stream up to 720p HD video and audio.

Remote Zoom

Remotely zoom smart glasses.

Remote Snapshots

Remotely take snapshots from smart glasses.

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Voice Solutions — Maintenance and Guided Workflows



Greater efficiency from enhanced picking compliance, streamlined data collection and removing manual data entry



Improved accuracy by eliminating transposition errors and recording information at the time of observation



Provides near-real-time visibility into operations information, plus the ability to quickly adapt to workflow changes



Increases employee satisfaction and retention while reducing training time for new employees



Connectivity Improvements



Robotics



AI and Machine Learning



Far Field Voice Recognition



Assisted Reality

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Preventative Maintenance Inspection Challenges



Documenting inspection and maintenance processes is time-consuming and error-prone.



Workers are continually interrupted with multi-step paperwork and data entry procedures.



Hardware is not well-suited for dirty, hands-busy environments.



Sensors and smart solutions are expensive to adopt and complex to implement.

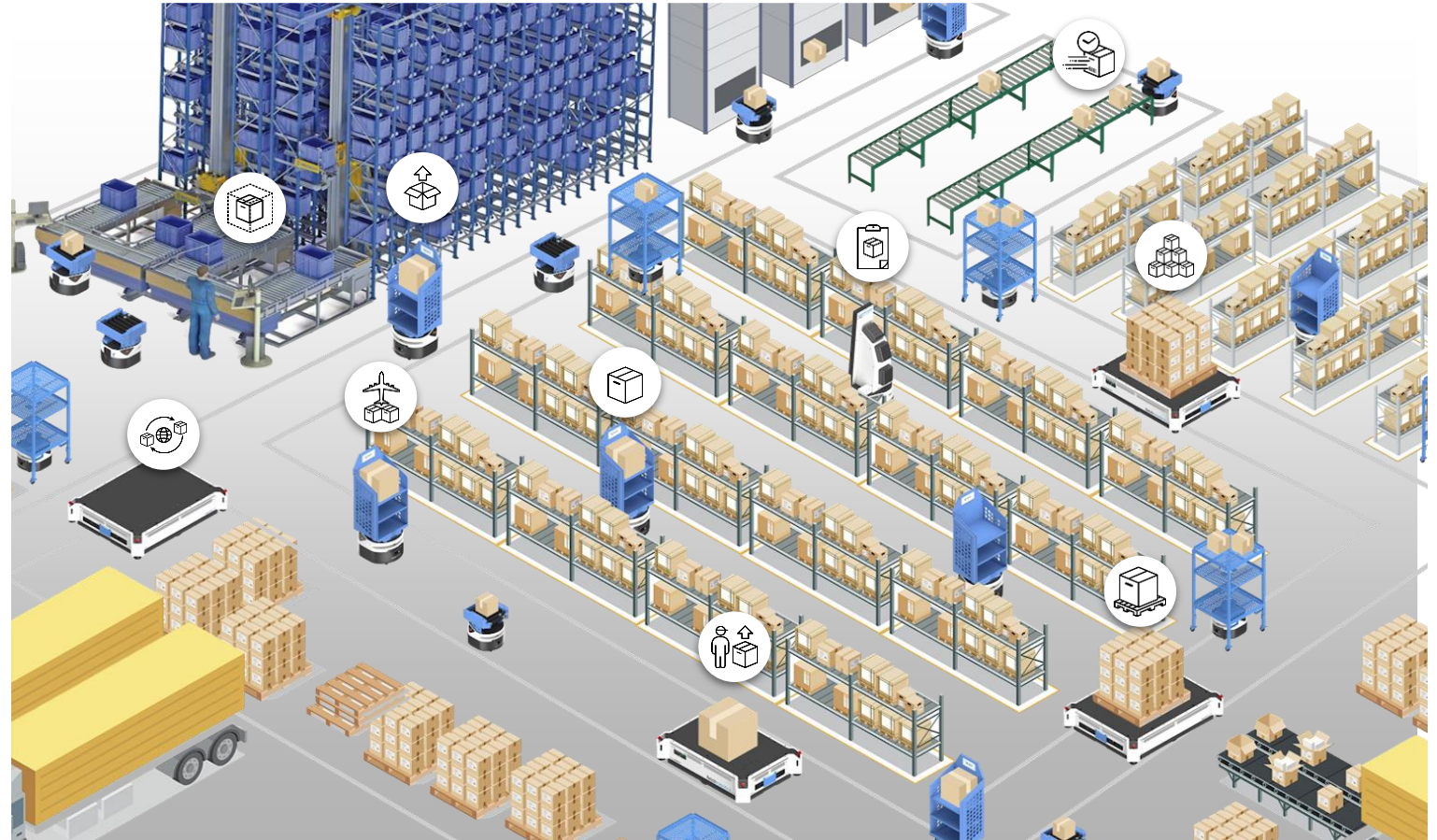
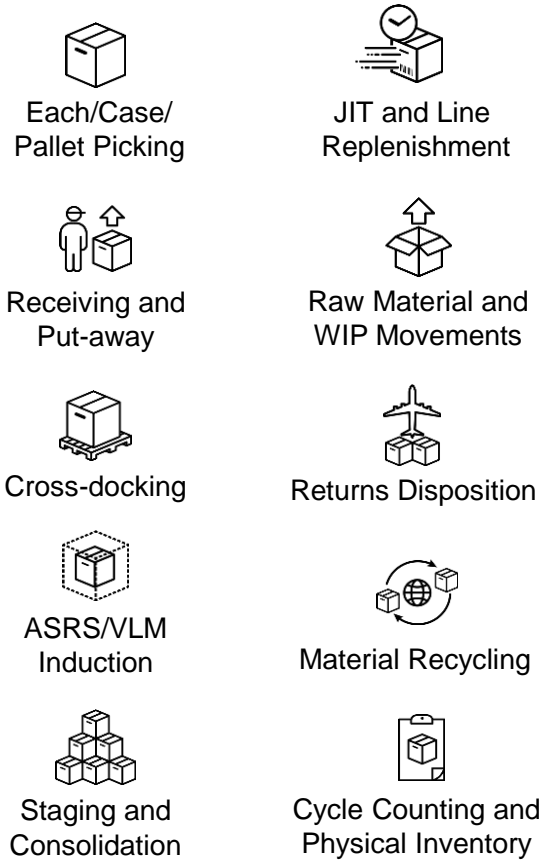
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Robotic Solutions to Collaborate With Available Labor

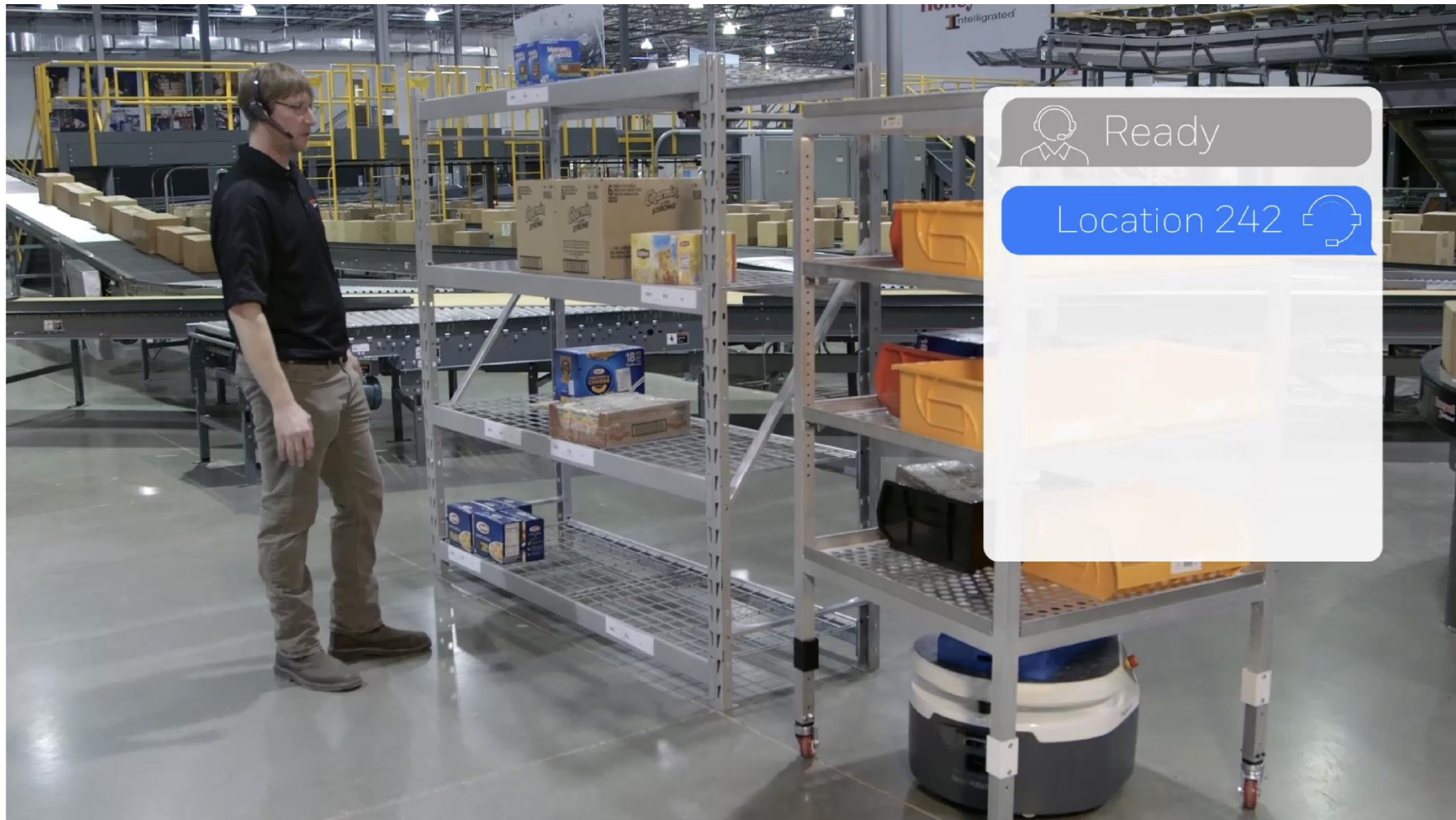
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Mobile Robotic Solutions — Human-Robot Collaboration



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Key Takeaways

- **Robots are becoming essential partners that free up labor for higher-value work due to the growing labor gap.**
- **Automation is now essential to staying competitive.**
- **Robotic solutions and other technologies are being used to support the workforce transition.**
- **They're improving operations today in three key ways:**
 - Augmenting available labor
 - Collaborating with your workforce
 - Bridging skill and technology gaps

Questions?



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For more information:

Speaker email: matt.wicks@honeywell.com

Website: www.intelligrated.com

Or visit MODEX Booth 7619a

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